

WHAT IS CLAIMED IS:

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1. A radio communications system comprising:
an intermittent power-on type mobile station for shifting
to a power-on state ^{at} in synchronous with a receiving timing of
5 a beacon signal, with a fixed period of time after the beacon
5 signal has been received being a data receive-ready period; and
a base station for emanating regularly a beacon signal to
said intermittent power-on type mobile station and
communicating with said intermittent power-on type mobile
10 station by radio while said intermittent power-on type mobile
10 station is controlled;
said base station preferentially transmitting data to a
normal mobile station in a normally power-on state when the
data to be transmitted to said intermittent power-on type
15 mobile station exists ⁱⁿ duration said data receive-ready period of
15 said intermittent power-on type mobile station.

2. A radio communications system comprising:
20 an intermittent power-on type mobile station for shifting
to a power-on state in synchronous with a receiving timing of
a beacon signal, with a fixed period of time after the beacon
5 signal has been received being a data receive-ready period;
and
25 a base station for emanating regularly a beacon signal to
said intermittent power-on type mobile station and
communicating with said intermittent power-on type mobile

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station by radio while said intermittent power-on type mobile station is controlled;

said base station reporting as time extension information that data must be received beyond said data receive-ready period, to said intermittent power-on type mobile station, when
5 said data is transmitted continuously beyond said data receive-ready period of said intermittent power-on type mobile station;
said intermittent power-on type mobile station sustaining its power-on state ^{till} all pieces of data transmitted
10 continuously from said base station are received when said intermittent power-on type mobile station has received said time extension information from said base station.

15 3. A radio communications system comprising:

an intermittent power-on type mobile station for shifting to a power-on state in synchronous with a receiving timing of a beacon signal, with a fixed period of time after the beacon
5 signal has been received being a data receive-ready period; and
20 a base station for emanating regularly a beacon signal to said intermittent power-on type mobile station and communicating with said intermittent power-on type mobile station by radio while said intermittent power-on type mobile
10 station is controlled;

25 said base station ^{previously} reporting ~~previously~~ transmission information regarding data to be transmitted to said intermittent power-on type station during the data receive-

ready period of said intermittent power-on type mobile station,
to said intermittent power-on type mobile station, and
transmitting said data within a predetermined period of time
after a completion of said data receive-ready period when data
5 included in said transmission data cannot be transmitted
during said data receive-ready period;

said intermittent power-on type mobile station sustaining
its power-on state when data included said transmission data
previously reported from said base station, and then extending
10 said data receive-ready period by said predetermined period of
time.

4. The radio communications system according to claim
15 3, wherein said intermittent power-on type mobile station shifts
to its power supply halt state at the time when all pieces of data
included in said transmission information have been received
within a predetermined period of time from a completion of
said data receive-ready period.

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5. A radio communications system comprising:
an intermittent power-on type mobile station for shifting
to a power-on state in synchronous with a receiving timing of
25 a beacon signal, with a fixed period of time after the beacon
signal has been received being a data receive-ready period; and

a base station for emanating regularly a beacon signal to said intermittent power-on type mobile station and communicating with said intermittent power-on type mobile station by radio while said intermittent power-on type mobile station is controlled;

said base station varying an emanation interval of said beacon signal to said intermittent power-on type mobile station according to a transmission data amount to said intermittent power-on type mobile station;

said intermittent power-on type station varying a receiving timing of the beacon signal which shifts to its power-on state, according to said emanation interval.

6. The radio communications system according to claim 5, wherein said base station narrows said emanation interval when said transmission data amount increases.

7. The radio communications system according to claim 5, wherein said base station spreads said emanating interval when said transmission data amount reduces.

8. A base station in a radio communications system wherein said base station emanates a beacon signal to an intermittent powered-on mobile station at regular intervals and

communicates with said intermittent power-on type mobile
5 station by radio while controlling said intermittent power-on
type mobile station, in said radio communications system; said
communications system accommodating said intermittent
5 power-on type mobile station which shifts to its power-on state
in synchronous with a receiving timing of said beacon signal,
10 with a constant period of time after a reception of said beacon
signal being a data receive-ready period; said base station
comprising a priority transmitting means for preferentially
10 transmitting said data over transmission data for a normal
mobile station in a normally powered-on state when said data
15 to be transmitted to said intermittent power-on type mobile
station exists during said data receive-ready period of said
intermittent power-on type mobile station.

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9. A base station in a radio communications system
wherein said base station emanates a beacon signal to an
intermittent power-on type mobile station at regular intervals
20 and communicates with said intermittent power-on type mobile
station by radio while controlling said intermittent power-on
mobile station, in said radio communications system; said
communications system accommodating said intermittent
power-on type mobile station which shifts to its power-on state
25 in synchronous with a receiving timing of said beacon signal,
with a constant period of time after a reception of said beacon
signal being a data receive-ready period; said base station

comprising time extension reporting means for reporting as
time extension information that data must be received beyond
said data receive-ready period, to the intermittent power-on
type mobile station, when data is transmitted continuously
5 beyond said data receive-ready period of said intermittent
power-on type mobile station.

10 10. A base station in a radio communications system
wherein said base station emanates a beacon signal to an
intermittent power-on type mobile station at regular intervals
and communicates with said intermittent power-on type mobile
station by radio while controlling said intermittent power-on
type mobile station, in said radio communications system; said
15 communications system accommodating said intermittent
power-on type mobile station which shifts to its power-on state
in synchronous with a receiving timing of said beacon signal,
with a constant period of time after a reception of said beacon
signal being a data receive-ready period; said base station
20 comprising:

transmission information reporting means for previously
reporting transmission data regarding data to be transmitted to
said intermittent power-on type mobile station, to said
intermittent power-on type mobile station, during said data
25 receive-ready period of said intermittent power-on type mobile
station; and

overtime transmitting means for transmitting said data within a predetermined period of time after a completion of said data receive-ready period when data included in said transmission information cannot be transmitted during said data receive-ready period.

11. A base station in a radio communications system wherein said base station emanates a beacon signal to an intermittent power-on type mobile station at regular intervals and communicates with said intermittent power-on type mobile station by radio while controlling said intermittent power-on type mobile station, in said radio communications system; said communications system accommodating said intermittent power-on type mobile station which shifts to its power-on state in synchronous with a receiving timing of said beacon signal, with a constant period of time after a reception of said beacon signal being a data receive-ready period; said base station comprising:

beacon signal emanation interval varying means for varying the emanation interval of said beacon signal to said intermittent power-on type mobile station according to a transmission data amount of said intermittent power-on type mobile station.

12. The radio communications system according to claim 11, wherein said beacon signal emanation interval varying means narrows said emanation interval when said transmission data amount increases.

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13. The radio communications system according to claim 11, wherein spreads said emanation interval when said transmission data amount reduces.

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14. An intermittent power-on type mobile station which shifts to its power-on state in synchronous with a receive^{ing} timing of a beacon signal emanated regularly from a base station, with a constant period after a reception of said beacon signal being a data receive-ready period, comprising:

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power supply control means for sustaining its power-on state till all pieces of data continuously transmitted from said base station are received when time extension information regarding that data must be received beyond said data receive-ready period has been received from said base station, and then extending said data receive-ready period.

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15. An intermittent power-on type mobile station which shifts to its power-on state in synchronous with a receiving timing of a beacon signal emanated regularly from a base

station, with a constant period after a reception of said beacon
signal being a data receive-ready period, comprising:

power supply control means for reporting previously
transmission information regarding data to be transmitted
5 from said base station during said data receive-ready period,
from said base station, and then sustaining its power-on state
when data included in said transmission information cannot
be received during said data receive-ready period to extend
said data receive-ready period by a predetermined period of
10 time.

16. The intermittent power-on type mobile station
according to claim 15, wherein said power supply control
15 means halts its power supply operation at the time when all
pieces of data included in said transmission data have been
received within said predetermined period of time after a
completion of said data receive-ready period.

20 17. An intermittent power-on type mobile station which
shifts to its powered-on state in synchronous with a receiving
timing of a beacon signal emanated regularly from a base
station, with a constant period after a reception of said beacon
25 signal being a data receive-ready period, comprising:

beacon signal receive timing varying means for varying
the beacon signal receive timing which shifts to its power-on

state according to an emanation interval when the emanation interval of said beacon signal is varied according to a transmission data amount in said base station.